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REMARKS

Claims 1-3, 22, 25, 26, 33-35, 37, 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bentley in view of Kaneko and further in view of Barclay (US 2899288) and optionally further in view of Gilbert (US 3813231). The Examiner admits that neither Bentley nor Kaneko disclose embedding particles in a heated film with a thermally controller roller. The Examiner states that Barclay teaches running a coated/preheated sheet through a pair of rollers with a cooling fluid, and Gilbert teaches embedding particles into a polymeric sheet using heat and pressure, and therefore the claimed invention is obvious. Applicant respectfully disagrees.

The claimed invention is not obvious because Barclay and Gilbert are non-analogous art. "In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." In re Oetiker, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). Barclay is non-analogous art to Bentley, Kaneko and to Applicant's invention.

Neither Barclay nor Gilbert are in Bentley, Kaneko or Applicant's field of endeavor. Bentley is directed to a condensing furnace, Kaneko is directed to a process for treating a surface of an aluminum heat exchanger, and Applicant's invention is directed toward a film for a heat exchanger. In contrast, Barclay is directed to a method for forming an abrasive sheet, and Gilbert is directed to sandpaper. Thus, the field of Barclay and Gilbert relate to abrasives sheets, while Bentley, Kaneko and Applicant's invention relate to heat exchangers. These fields are very different from each other. There is no motivation for one skilled in the art to consider a reference relating to an abrasive material when modifying a heat exchanger. Further, each of these fields have specific and unique design criteria and component characteristics, which are not compatible with each other.

Additionally, neither Barclay nor Gilbert is reasonably pertinent to the Applicant's particular problem. A reference is reasonably pertinent if, even though it may be in a different field of endeavor, it logically would have commended itself to an inventor's attention in considering his problem because of the matter with which it deals. In re Clay, 966 F. 2d 656, 659, 23 USPQ2d 1058, 1061 (Fed. Cir. 1992). As discussed above, Barclay and Gilbert are clearly not within the field of heat exchangers, which is the subject to which Applicant's invention is directed. Further,

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Barclay and Gilbert do not logically commend themselves to the attention of an inventor seeking to solve problems present in heat exchangers. This is because Barclay deals with the problem of creating an abrasive surface by securing an abrasive grit to a backing to form sandpaper, and Gilbert deals with the problem of providing an improved abrasive product. Sandpaper and abrasive surfaces are rubbed against another surface to grind down the other surface. Therefore, the abrasive grit must be strongly secured to a backing so that the abrasive grit can function. This problem is not present in a heat exchanger that is used to exchange heat between two fluids and is far removed from Applicant's problem of creating a film for a heat exchanger with a high surface energy having improved wettability properties so that liquid condensate spreads over the polar surface of the film instead of forming droplets that can spread into the atmosphere. Barclay and Gilbert are non-analogous art, and the claimed invention is not obvious.

Additionally, the claimed invention recites that a plurality of polar particulates are added to a surface of a heated film and that a roller embeds the plurality of polar particulates into the surface of the heated film. Gilbert discloses that "after the film has cooled, a uniform layer of an abrasive or grit was evenly distributed over the surface of the same" (column 4, lines 24 to 26). Additionally, Gilbert also discloses that a platen (column 4, line 28) is used to press the abrasive particles into the film. Gilbert does not disclose adding a plurality of polar particulates to a heated film and does not disclose employing a roller.

Additionally, in Gilbert, the platen is pressed against the abrasive grit and backing for 30 minutes at a temperature of about 75 to 100°C. The claimed invention recites a roller, and a roller does not apply pressure against the film for that extended amount of time. A roller only briefly contacts a surface as the surface is passed through the roller. Therefore, even if the features of Gilbert are added to Bentley, Kaneko and Barclay, the combination would not teach, suggest or disclose the claimed invention.

The claimed invention is also not obvious because there is no reason or motivation to employ abrasive particles on a film of a heat exchanger as taught by Barclay and Gilbert. A heat exchanger exchanges heat between two fluids, and adding an abrasive surface would provide no benefit. There is no motivation to consider the abrasive particles of Barclay and Gilbert for use with a heat exchanger. Therefore, there is no motivation to modify Bentley/Kaneko in the manner suggested by the Examiner.

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Claim 6 is further not obvious. Claim 6 recites the step of applying an adhesive substance to the surface of a film, and the step of embedding includes pressing the plurality of polar particulates into the adhesive. The Examiner states that it would be obvious to employ the teachings of Barclay and Gilbert to obviate an adhesive and improve cost-effectiveness. That is, Barclay and Gilbert teach against using an adhesive. Claim 6 recites an adhesive. Barclay and Gilbert teach against using an adhesive, and therefore it would not be obvious to employ an adhesive in Bentley and Kaneko as claimed. Claim 6 is further not obvious.

Claims 29-32 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bentley in view of Kaneko and further in view of Barclay and optionally further in view of Gilbert and further in view of Rickert or Stewart or Steele or Hommeltoft (US 5245100). Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bentley in view of Kaneko and further in view of Barclay and optionally further in view of Gilbert, and further in view of Linford. Claims 29-32, 36 and 7 depend on patentable claim 1 and are allowable for the reasons set forth above. The claimed invention is not obvious.

Thus, claims 1-3, 5, 7, 22, 25-27 and 29-40 are in condition for allowance. No additional fees are seen to be required. If any additional fees are due, however, the Commissioner is authorized to charge Deposit Account No. 50-1482, in the name of Carlson, Gaskey & Olds, P.C., for any additional fees or credit the account for any overpayment. Therefore, favorable reconsideration and allowance of this application is respectfully requested.

Respectfully Submitted,

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CERTIFICATE OF FACSIMILE

I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office, 571-273-8300 on July 27, 2005.


Amy M. Spaulding